Category: Therapeutics

Study Type: Systematic review and meta-analysis

Author's declarative title: Psychological therapies help reduce headache and non-headache pain in children and adolescents.

Citation: Eccleston C, Palermo TM, Williams AC, *et al*. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database Syst Rev* 2014;**5**:CD003968.

Commentary (813 words from context + 38 in references = 851 words)

Context

Chronic and recurrent pain, especially in the head, abdomen and limbs affects up to 30% of children and adolescents. Pain can be severely disabling, disrupting school and social activities, and, if left untreated, may extend towards adulthood. Increasing evidence shows that psychological factors are pivotal in the transition from acute to chronic disabling pain. As a result, psychological interventions have been developed to modify the emotional, cognitive and behavioural processes that are considered to maintain pain, disability and distress. Psychological interventions initially designed for adults have been modified and applied to paediatric patients. These include behavioural (eg, relaxation training, biofeedback, operant management) and cognitive treatments (eg, cognitive coping skills training, guided imagery, stress management), or combinations of these. Although previous reviews have documented the effectiveness of psychological treatment for chronic pain in youth, the current review aimed at updating the evidence on efficacy by examining the impact of these treatments on mood symptoms and describing the risk of bias of the studies included.

Methods

Published randomised controlled trials (RCTs) of credible psychological treatments delivered face-to-face to youths (<18 years) with chronic non-cancer, non-medical pain—as compared to an active treatment, treatment as usual or waiting-list control—were considered for review. The authors assessed risk of (selection, detection, attrition and reporting) bias using the Cochrane Collaboration's 'Risk of bias' tool, and overall outcome quality using the GRADE criteria.

Findings

The authors reviewed 37 RCTs that addressed headache (including migraine) (n=20) and non-headache conditions (n=17) in a total of 2111 participants. Most of the included studies were judged as having unclear risk of selection (>65% of studies), detection (84% of studies) and attrition bias (51% of studies), but low risk of reporting bias (46% of the studies).

Psychological therapies were beneficial for children with chronic pain on seven outcomes. For headache pain, pain was reduced post-treatment (risk ratio (RR) = 2.47, 95% confidence interval (CI) 1.97 to 3.09; GRADE: low) and at follow-up (RR=2.89, 95% CI 1.03 to 8.07; GRADE: very low). Disability was also reduced post-treatment (standardised mean difference (SMD) = -0.49, 95% CI -0.74 to -0.24; GRADE: low) and at follow-up (SMD=-0.46, 95% CI -0.78 to -0.13; GRADE: low). No effect was found for depression post-treatment (SMD=-0.18, 95% CI -0.49 to 0.14; GRADE: moderate). The beneficial effect for anxiety post-treatment (SMD=-0.33, 95% CI -0.61 to -0.04, GRADE: low) was not maintained at follow-up (SMD=-0.28, 95% CI -1.00 to 0.45; GRADE: very low).

For non-headache pain, improvements were found for pain and disability post-treatment (pain: SMD=-0.57, 95% CI -0.86 to -0.27; GRADE: very low; disability: SMD -0.45, 95% CI -

0.71 to -0.19, GRADE: very low), but not at follow-up (pain: SMD=-0.11, 95% CI -0.41 to 0.19, GRADE: low; disability: SMD -0.35, 95% CI -0.71 to 0.02, GRADE: low). No effect was found for depression or anxiety post-treatment (depression: SMD=-0.07, 95% CI -0.30 to 0.17, GRADE: moderate; anxiety: SMD -0.15, 95% CI -0.36 to 0.07, GRADE: moderate) or at follow-up (depression: SMD 0.06, 95% CI -0.16 to 0.28, GRADE: moderate; anxiety: SMD 0.05, 95% CI -0.24 to 0.33; GRADE: moderate).

The authors conclude that psychological therapies were effective in reducing pain intensity and disability for children with headache and non-headache pain conditions, and that these effects were maintained at follow-up for children with headache conditions. However due to concerns regarding evidence quality, the authors state that they are not highly confident in the estimates of effect.

Commentary

This carefully conducted systematic review highlights the role of psychological treatments for children and adolescents with chronic and recurrent pain. These data are encouraging because, compared to pharmacological treatments, psychological treatments are likely to empower patients and have no negative side effects. Also, these findings support the use of system resources for psychological counselling. Despite these strengths, there are also some limitations. As the authors note, the quality of some of the body of evidence is rather low; therefore, new evidence might affect the estimates found in this review. Thus, further high-quality research on psychological treatments for youth with chronic pain is needed.

Even with high-quality data there is also the issue of generalizability and utility for clinicians; how can we transfer knowledge from a group of studies to our next patient? The answer is: we can't. Group means do not represent any individual participants. Group studies are designed to transfer knowledge derived from a sample to the whole population, and may be of less value to clinicians who are concerned with data from an individual child with chronic pain. Fortunately, behavioural science has moved on and single-case experimental designs (SCEDs) with sophisticated methodology are now available[2]. SCEDs allow for immediate feedback on the outcome of a current treatment to both patients and healthcare providers, and provide empirical evidence to guide subsequent care if necessary. It is likely that the next generation of systematic reviews will include SCEDs for psychological treatments for youth with chronic and recurrent pain.

Commentator details

Name: Johan WS Vlaeyen
Affiliation: University of Leuven, Belgium; Maastricht University, Netherlands
Correspondence address: Psychological Institute, KU Leuven, Tiensestraat 102, 3000 Leuven, Belgium
Email: johan.vlaeyen@ppw.kuleuven.be

and

Name: Rena Gatzounis
Affiliation: University of Leuven, Belgium; Maastricht University, Netherlands

References

1. Perquin CW, Hazebroek-Kampschreur AAJM, Hunfeld JAM, *et al*. Pain in children and adolescents: a common experience. *Pain* 2000;**87**:51-8.
2. Onghena P, Edgington ES. Customization of pain treatments: single-case design and analysis. *Clin J Pain* 2005;**21**:56-8; discussion 69-72.

Competing interests

None